

PrintServer 40: Stretching the Limits of Laser Printing

digital



The PrintServer 40 is a new breed of printer that can satisfy the printing needs of every group in your company. Dozens of users can share the PrintServer 40 because it is connected to Digital's Ethernet. For MIS and office personnel, often the most important consideration is paper handling and printing speed; the PrintServer 40 has an input capacity of 2,500 sheets ranging in size from memo/note to large project plans. And its laser print engine churns out paper at up to 40 pages per minute—a speed that will satisfy even the most ambitious time schedule.

For business managers whose priority is print quality and readability, the PrintServer 40 offers the near-typeset quality resolution of 300 dots-per-inch.

Publication managers, designers, and engineers looking for sophisticated graphics, a wide variety of typestyles, and camera-ready page layouts with integrated text and graphics will find all this with the PrintServer 40. With the powerful PostScript™ page description language handling the PrintServer 40's design work, they can do all elements of their publishing work inhouse.

How can one printer be so many things to so many people? Because it is much more than a conventional printer. It represents a new concept in printing—a print server that can satisfy the printing needs ranging from data processing to word processing to electronic publishing.



Highlights

- Prints up to 40 pages per minute.
- Provides near-typographic quality with 300 dot-per-inch resolution.
- Uses a dedicated Digital-designed processor as its print controller for unmatched data handling and image generation.
- Uses PostScript page description language to produce sophisticated text and graphics page composition.
- Includes DECnet-compatible software that enables shared use by Ethernet connected hosts.
- Provides 29 resident typefaces for a wide variety of print styles.
- Prints files created in ReGIS, ANSI/Sixels, and Tektronix™ 4010/4014 protocols through host-resident translators to ensure software compatibility.
- Includes large capacity input bin and two auxiliary input trays with a total capacity of 2500 pages for maximum time between refills. Output is stacked face down for easy collating in either of two trays. Each tray has a capacity of up to 500 pages.
- Handles a variety of paper and transparency sizes including A3, A4, B4, 8.5 by 11 inches, 8.5 by 14 inches, 11 by 17 inches, and 7.5 by 10.5 inches.
- Typical duty cycle of 50,000 pages per month.

PrintServer 40 – The Speed of a Laser with the Brains of a MicroVAX

The PrintServer 40 is the first of Digital's Ethernet printers and also the first of the "Server" category. It offers a complete printing solution for VAX and MicroVAX system users who typically print 30,000 to 100,000 pages per month and who need higher quality output than they can get from traditional system printers. The PrintServer 40 is a resource that can satisfy the individual printing needs of a variety of users – and it has the printing speed to meet those needs on demand.

The PrintServer 40's data controller is a MicroVAX II subsystem with 5 Mbytes of memory. This MicroVAX II is the link between the host computer and the laser print engine. It processes images, graphics, and text into a bit map with the help of graphics accelerator hardware, and then outputs this as a video signal to the print engine. Many of the print functions commonly handled by the host computer are offloaded to the PrintServer 40, resulting in faster, more efficient print operations.

The data controller contains the processors, memory, and interfaces that enable the PrintServer 40 to receive instructions and data, to compose the images to be printed, and then to print them. It also contains two 1.25-megabyte full-page bit-map memories. These memories are configured according to print mode and page size. This enables the PrintServer 40 to compose an entire page at once in full 300 by 300 dpi resolution. And it means that one standard letter-sized page is printed while another is being composed.

The PrintServer 40 also includes a VT220 terminal for use as a print-server console. Users can conveniently monitor printer status, active print job characteristics, and job defaults. Server management facilities are available at the local console and from selected terminals on the network. These functions include job controls, printer characteristics, and accounting details.

PostScript Software Turns the PrintServer 40 into an Electronic Publisher

Another key to the PrintServer 40's multifaceted performance is a powerful page description language called PostScript developed by Adobe Systems, Inc. PostScript enables the printer to treat text, graphics, and scanned images in the same way,

allowing complete flexibility in describing the appearance of a printed page. You can use the PrintServer 40 to turn out highly professional, complex documents with rotated type, textures, patterns, halftones, and images in any size and shape. With PostScript driving the PrintServer 40, office publishing becomes a reality.

PostScript's distinctive features have already made it a leader in the world of printer software.

PostScript resides in the printer. In operation the PrintServer 40 receives PostScript print commands over the Ethernet interface and interprets these commands for the laser marking engine. Because PostScript is essentially device-independent, files created on the PrintServer 40 may also be printed on high-quality typesetting systems. The page will be identical except for the higher resolution available with typesetting equipment.

Through PostScript you can manipulate text as freely as graphics. Twenty-nine resident typefaces are provided with the PrintServer 40 in outline form. These outlines may be scaled to any point size and placed in any position on the page.

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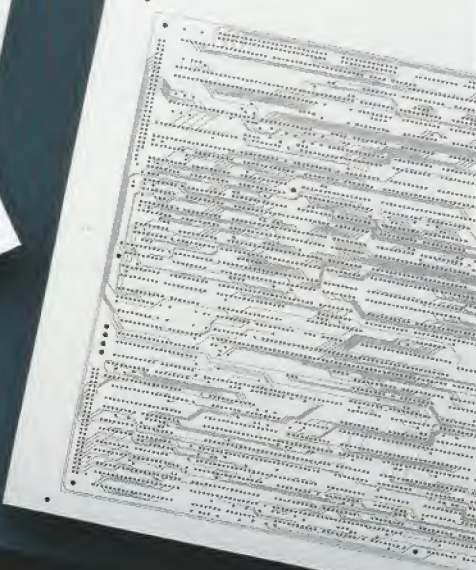
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The clear, sharp resolution of the PrintServer 40 means you can create small charts, graphs and diagrams and print them on text pages. The labelling will be clear and readable. Because the PrintServer 40 will handle an infinite gray scale, you can differentiate portions of a graph with shades rather than lines or dots.



STOCKS GAIN



Storing typefaces as outlines creates the opportunity for some very sophisticated graphic operations. For instance, in addition to scaling and positioning, PostScript can rotate graphic elements to any degree. It can transform them by stretching, shrinking or obliquing; overlay and superimpose text and graphics; fix text to any linear or nonlinear surface; and fill characters with any texture or shade of grey, as well as combinations of these various effects. This capability is essential for applications—such as advertisements, business charts, and technical drawings—that require a well-proportioned composition of text and pictures. Instead of using outside vendors for typesetting, paste-up, and printing—you can do this entire process electronically and print your job as a single composite page on the PrintServer 40.

PostScript Application Software

The PrintServer 40 expands the printing capabilities of Digital's other printers. In addition to printing today's popular applications, PrintServer 40 users will benefit from enhanced page descriptor features that can be found in new, PostScript-based software.

Most software now designed to print on Digital's LN03 and LN03 PLUS laser printers will produce the same results on the PrintServer 40. That's because the PrintServer 40 includes translator software that enables applications using non-PostScript software

to output to the printer. For example, text and sixel graphics applications will get the same results as the LN03 PLUS through the ANSI/sixel translator. ReGIS-based graphics applications will get the full 300-dot-per-inch resolution using the ReGIS translator. Many CAD/CAM graphics programs will use the Tektronix 4010/4014 translator. So, if you're running today's WPS-PLUS/VMS, DECpage, or DECgraph, for example, the PrintServer 40 will give you high-quality printed pages fast.

Software that outputs in PostScript will be interpreted directly by the printer without the need for translators. Although some users will wish to write programs directly in PostScript, most users will enjoy the power of the language through an increasing variety of popular applications software. Most of Digital's text and graphics applications software will take advantage of the power of PostScript in future releases.

Many third-party software packages are already available in PostScript, and the list is growing all the time. Available today are word processing and document packages, integrated text and graphics packages, and dedicated text/graphics workstation and typesetting packages.

Print Server System Software Handles the Print Operations

While PostScript software takes care of page composition, the PrintServer Software handles all the print management functions. This software provides the communication between the host with a print job and the PrintServer 40. The software is distributed across the network—some of it resides on the host and some of it resides on the printer. Every aspect of printing a job, with the exception of how it will appear on the page (PostScript's job), is performed by this software. These print functions:

- Process print requests from designated print queues serviced by the printer.
- Transmit print requests to the printer and relay system messages from the printer back to the user.
- Translate data into PostScript.
- Downline load PrintServer 40 software.
- Store PrintServer 40 event logging and accounting data.
- Report status of the system and queued jobs through a menu-driven interface.

The PrintServer 40 Offers Unsurpassed Paper Handling

As impressive as the PrintServer 40's hardware and software components are—for the user it all comes down to paper handling. How fast can the printer print the job? How many pages can the printer handle? What kind of paper can the printer accommodate? The PrintServer 40 excels in all three performance categories.

First, it churns paper out at speeds up to 40 pages per minute, depending on the size and complexity of the page. That speed surpasses our fastest system lineprinters. Data processing applications are easily handled by the PrintServer 40.

Second, when it comes to volume, the PrintServer 40 has three input bins—one accommodates 2,000 pages, the other two trays hold 250 pages each—for a grand total of 2,500 pages. This could easily translate into 50 pages of printing each day for up to 50 users without having to reload paper even once. You can get just the right paper combination for your job by loading the input trays with three different paper sizes. Through the print command, you simply specify which tray you want the printer to use. The PrintServer 40 has two user-selectable output trays that hold up to 500 pages each. The pages may be output face down for easy collating.

Third, the PrintServer 40 will print on a variety of paper, forms, and transparencies. Each input tray has a set of adjustable rails that can be locked in at installation to popular standard paper dimensions. If you want to keep

a supply of paper in varying sizes always on hand, you can purchase a variety of different sized paper trays. In addition to printing on forms such as statements, tax forms, personnel files, the PrintServer 40 also handles the following national and metric paper sizes—A3, A4, A5, B4, B5, 7.5 by 10.5 inches, 8.5 by 11 inches, 8.5 by 14 inches, and 11 by 17 inches. So whether you're a businessperson who wants to print a memo, or a design engineer who wants to print a schematic—you both can send your output to the PrintServer 40. That's versatile paper handling!

The PrintServer 40 Is Sophisticated, Yet Easy to Operate and Maintain

A surprising feature of the PrintServer 40 is how easy it is to operate. Normal operation consists of very few tasks: turning the main power switch to ON, loading paper into the input trays, changing paper trays, and removing output from the output trays. The PrintServer 40 automatically boots from a network host. If a power failure occurs, the PrintServer 40 restarts automatically upon resumption of power. The job in process at the time of the power failure may be discarded, but with no operator intervention, the host will requeue it. Standard operating errors such as "paper out" or "paper jam" are displayed with icons on the front panel. Operator cards are attached to the printer with simple instructions for correcting the problem.

The PrintServer 40 has been designed to provide maximum availability. The components that require replacement have been placed in maintenance kits designed to be installed in just minutes by a Key Operator. Digital's Field Service engineers will train your Key Operator when the PrintServer 40 is installed.

As an added convenience, every PrintServer 40 comes with a dedicated VT220 display terminal. The terminal acts as a console device displaying error messages, system status, and print job status. With this terminal, you can even change the default characteristics of print jobs.

These management services are also available remotely from terminals on a supporting host system. System managers may obtain information on the status of printer, hardware, and software revision levels, Ethernet address, active job characteristics and queued jobs by client.

Reliability is crucial in a shared printer. The PrintServer 40 is designed to be trouble-free for thousands of pages. The PrintServer 40's modular design also makes it easy for technicians to provide fast, economical service.

Specifications

Product Description

Product type	Nonimpact printer with MicroVAX II data controller, high performance graphics accelerator, Ethernet interface, PostScript and PrintServer System software, VT220 console terminal.
Printing technique	Electrophotographic, plain paper, dry toner, heat and pressure fusing
Prerequisite hardware	VAX or MicroVAX systems with Ethernet
Prerequisite software	VMS V4.2 (or greater) DECnet Phase IV

Product Performance

Print speed*	Up to 40 pages per minute with 8.5 x 11 in paper Up to 24 pages per minute with 8.5 x 14 in paper Up to 20 pages per minute with 11 x 17 in paper
Image resolution	300 x 300 dpi for text, graphics, and images
Paper handling	2500 cutsheet input of 20 lb. weight paper Two output trays with up to 500 sheets each. Both trays output face down for easy collation.

Media Characteristics

Paper	16 lb. min.; 24 lb. max.
Transparencies	Polyester film with a basic thickness of 4 mils (\pm .4 mils) with both sides coated to receive toner.

Paper Sizes:

Primary paper supply:	2000 sheets of 20 lb. paper
North American	8.5 in x 11 in and 8.5 in x 14 in
Metric	A4, A5, B4, B5
Secondary paper supply:	2 trays with 250 sheets each of 20 lb. paper
Small tray	250 sheets of 20 lb. paper
North American	8.5 in x 11 in and 7.5 in x 10.5 in
Metric	A4, A5, B5
Large tray	250 sheets of 20 lb. paper
North American	8.5 in x 11 in, 8.5 in x 14 in, 11 in x 17 in
Metric	A3, B4

*Print speed is a function that is dependent on several characteristics: paper size, amount of text and number of font changes, and graphics complexities.



Specifications (cont.)

Typefaces (built in)	Courier (fixed pitch) with bold, oblique, and bold oblique Times® with bold, italic, and bold italic Helvetica® with bold, oblique, and bold oblique Symbol/Math ITC Avant Garde Gothic® Book with Book oblique, demi and demi-oblique New Century Schoolbook Roman with bold, italic and bold italic ITC Lubalin Graph® Book with Book oblique, demi and demi-oblique ITC Souvenir® demi, demi italic, light and light italic
Font cache	256 Kbytes RAM
Physical Characteristics	
Height	40.4 in (1026.6 mm)
Width	60.0 in (1524.0 mm) (includes 12 inches for second output tray)
Depth	28.4 in (721.36 mm)
Weight	485 lbs (219.99 mm)
Power Requirements	
Voltage	200/208/240V, 60 Hz; 200/220/230/240V, 50 Hz
Heat Dissipation	Less than 6,000 Btu/hr
Operating Environment	
Environment classification	DEC STD 102 Class A
Operating temperature	15°C (59°F) to 32°C (90°F)
Relative humidity	to 95% noncondensing
Altitude	6,500 ft (2,000 meters)
Acoustic noise	Less than 55 Dba
Models	
North American	LPS40-AA
International	LPS40-A3

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